Amendments to the Claims:

- 2 This listing of claims will replace all prior versions, and
- 3 listings, of claims in the application:
- 4 Listing of Claims:

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- (Currently amended) A membrane for use in inside a testing . 5 cell which has a pressure chamber for receiving a specimen and 6 applying forces to said specimen, said membrane comprising to 7 . 8 isolate a specimen, said membrane comprising a flexible film 9 adapted to envelope said specimen and isolate said specimen from 10 the interior of said chamber, said membrane adapted to maintain 11 intimate contact with said specimen, having a thickness, said 12 membrane adapted to envelope a specimen, instrumentation embedded 13 in said thickness membrane for measuring a physical property of a 14 specimen.
- 15 2. (Original) A membrane of claim 1 wherein said physical 16 property being one of the group consisting of stresses, strains, 17 deformation, temperature, soil suction or moisture content.
- 3. (Original) A membrane of claim 1 wherein said
 membrane has a longitudinal axis and a radial axis, said
 instrumentation oriented in said membrane to measure said physical

- 1 property in the longitudinal direction.
- 4. (Original) A membrane of claim 1 wherein said membrane is
- 3 tubular, said instrumentation oriented in said membrane to measure
- 4 said physical property in the circumferential direction.
- 5 5. (Original) A membrane of claim 4 wherein said membrane has
- 6 a longitudinal axis and a radial axis, said instrumentation
- 7 oriented in said membrane to measure said property in the
- 8 longitudinal direction.
- 9 6. (Currently amended) A membrane of claim 1 A membrane for
- 10 use in a testing cell to isolate a specimen, said membrane
- 11 comprising a flexible film having a thickness, said membrane
- 12 adapted to envelope a specimen, instrumentation embedded in said
- thickness for measuring a physical property of a specimen wherein
- 14 said instrumentation is oriented in multiple directions in said
- membrane to measure said physical property and calculate Poisson's
- 16 ratio.
- 7. (Currently amended) A membrane of claim 1 wherein for use
- in a testing cell to isolate a specimen, said membrane comprising
- 19 a flexible film having a thickness, said membrane adapted to

- 1 envelope a specimen, instrumentation is embedded in said thickness
- 2 for measuring strains causing deformation of a specimen.
- 3 8. (Original) A membrane of claim 7 wherein said membrane has
- 4 a longitudinal axis and a radial axis, said instrumentation
- 5 oriented in said membrane to measure strains in the longitudinal
- 6 direction.
- 7 9. (Original) A membrane of claim 7 wherein said membrane is
- 8 tubular, said instrumentation oriented in said membrane to measure
- 9 circumferential properties in response to stresses.
- 10. (Original) A membrane of claim 9 wherein said membrane
- 11 has a longitudinal axis and a radial axis, said instrumentation
- oriented in said membrane to measure strains in the longitudinal
- 13 direction.
- 11. A membrane of claim 7 A membrane for use in a testing
- 15 cell to isolate a specimen, said membrane comprising a flexible
- 16 film having a thickness, said membrane adapted to envelope a
- 17 specimen, instrumentation embedded in said thickness for measuring
- 18 strains causing deformation of a specimen wherein said
- instrumentation is oriented in multiple directions in said membrane

- 1 to measure said physical property and calculate Poisson's ratio.
- 2 12. (Original) A membrane of claim 7 wherein said
- 3 instrumentation includes an instrument for measuring temperature
- 4 in the specimen.
- 5 13. (Original) A membrane of claim 7 wherein said
- 6 instrumentation includes an instrument for measuring moisture
- 7 content of the specimen.
- 8 14. (Currently amended) The membrane of claim 7 wherein said
- 9 instrumentation includes an intrument instrument for measuring soil
- 10 potential.
- 11 15. (Withdrawn) A method of manufacturing a flexible membrane
- 12 with cavities to receive instrumentation comprising the steps of
- providing a mold having an inside wall, an outside wall, and an end
- 14 wall between said inside wall and said outside wall, forming
- openings in said outside wall, attaching mold plates to said
- outside wall, said mold plates extending toward said inside wall,
- 17 attaching flats to said mold plates, said flats including mold
- 18 cavity components disposed within said mold plates, said flats
- 19 closing said openings, adding a membrane material to said mold

- 1 between said inside wall and said outside wall, curing said
- 2 membrane material, removing said flats, said mold cavity components
- 3 and said mold plates.
- 4 16. (Withdrawn) A method of claim 15 wherein said mold is
- 5 circular.
- 6 17. (Withdrawn) A method of claim 15 wherein said mold is
- 7 rotated to dispose said membrane material uniformly about said
- 8 inside wall and within said mold plates.

9 **NEW CLAIMS**

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- 11 18. (New) A membrane of claim 1 wherein said flexible film
- 12 is formed from one of the group consisting of latex rubber,
- 13 silicone rubber, urethane, or Silastic.
- 14 19. (New) A membrane of claim 1 wherein said flexible film
- is tubular with a continuous sidewall with a cavity formed in said
- sidewall, said instrumentation disposed in said cavity.